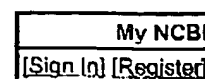
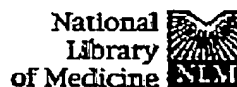


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☐ 1: Curr Microbiol. 2002 Feb;44(2):132-5.

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Cloning and molecular analysis of poly(3-hydroxyalkanoate) biosynthesis genes in *Pseudomonas aureofaciens*.

Nishikawa T, Ogawa K, Kohda R, Zhixiong W, Miyasaka H, Umeda F, Maeda I, Kawase M, Yagi K.

Graduate School of Pharmaceutical Sciences, Osaka University, 1-6 Yamada-oka, Suita, Osaka 565-0871, Japan.

Pseudomonas aureofaciens grown on octanoate or gluconate synthesized medium-chain-length polyhydroxyalkanoates (mcl-PHAs). To clone the PHA synthase gene(s) (phaC), the genomic library of *P. aureofaciens* was constructed using a cosmid vector. The recombinant cosmids that clone phaC were detected by the complementation with a PHA-negative mutant, *P. putida* GPP104. The resulting recombinant cosmid, named pVK6, contained a 13-kbp DNA insert. Genetic analysis of the pha locus in pVK6 revealed the presence of six ORFs, genes encoding two PHA synthases, 1 and 2 (phaC1 and phaC2), PHA depolymerase (phaZ), two PHA granule-associated proteins (phaF and phaI), and an unknown protein (phaD). The heterologous expression of pha genes from *P. aureofaciens* was confirmed. *P. putida* GPP104 regained the ability to accumulate PHA on introduction of pVK6. Wild-type strains *P. oleovorans* and *P. fluorescens*, which were unable to accumulate PHA when grown on gluconate, acquired the ability to accumulate PHA from gluconate when they possessed pVK6.

PMID: 11815858 [PubMed - indexed for MEDLINE]

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